APPENDIX II

ENDANGERED SPECIES CONSULTATON

file

April 20, 1994

Planning Division
Environmental Branch

Mr. David L. Ferrell
Field Supervisor
U.S. Fish and Wildlife Service
P.O. Box 2676
Vero Beach, Florida 32961-2676

Dear Mr. Ferrell:

This is in reference to the upcoming maintenance dredging of the St. Petersburg Harbor in Tampa Bay, Florida (see attached maps).

According to the U.S. Fish and Wildlife Service, Region 4 Handbook, *Endangered and Threatened Species of the Southeastern United States*, the following species could be found in Tampa Bay:

green sea turtle	*Chelonia mydas*
hawksbill sea turtle	*Eretmochelys imbricata*
Kemp's Ridley sea turtle . .	*Lepidochelys kempii*
leatherback sea turtle . . .	*Dermochelys doriacea*
loggerhead sea turtle . . .	*Caretta caretta*
West Indian manatee	*Trichechus manatus*

Since no food or habitat for manatees and sea turtles is located in or adjacent to the dredging area, we have made a No Effects determination concerning the impacts of the proposed dredging on these species. In addition, we will place the standard special conditions in the Plans and Specification to protect the manatees should they wander into the construction area. Pursuant to Section 7 of the Endangered Species Act, we are asking for your concurrence in this determination.

Sincerely,

A. J. Salem
Chief, Planning Division

Enclosure

bcc:
CESAJ-CO-ON
CESAJ-DP

cc: Konferek/CESAJ-PD-ES KH
~~Kunzbach~~/CESAJ-PD-ES 4/20
~~Smith~~/CESAJ-PD-E
Davis/CESAJ-PD-A
TDY Salem/CESAJ-PD

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive South
Suite 310
Jacksonville, Florida 32216-0958

IN REPLY REFER TO:
FWS/R4/ES-JAFL

April 5, 2000

Mr. James C. Duck
Chief, Planning Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida

FWS Log No.: 99-164 (St. Petersburg)

Dear Mr. Duck:

Enclosed is the biological opinion of the U.S. Fish and Wildlife Service regarding the Egmont Key beach renourishment project. This biological opinion is provided in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*), and satisfies the Act. It does not address the requirements of other statutes, such as the National Environmental Policy Act.

The enclosed biological opinion is based on information provided by the public notice, the Corps project manager, Florida Fish and Wildlife Conservation Commission, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office. Should you have any questions regarding this biological opinion, please contact Bryan Pridgeon of my staff at (727)-570-5398 ext. 13.

Sincerely,

for David L. Hankla
Field Supervisor

Enclosure

BIOLOGICAL OPINION
Egmont Key Beach Renourishment Project

Consultation history

The Corps requested consultation for placing dredged material and constructing two geo-tube groins on the western shoreline of Egmont Key by a letter dated January 6, 2000. Our concerns with the project regard sea turtle nesting capabilities on a beach nourished with materials that may not be of beach quality and the effects of the groin field on sea turtle nesting. The Corps sent a letter to us on April 20, 1994, in which they concluded the St. Petersburg Harbor dredging project would not affect sea turtles or manatees. We provided a letter of concurrence on May 17, 1994. The current consultation does not address the dredging project; it addresses only the placement of dredged material on the western shoreline of Egmont Key and the construction of two geo-tube groins as described below and the potential effects on loggerhead and green sea turtles.

Biological Opinion

Description of the proposed action

The project is located on Egmont Key, an island at the mouth of Tampa Bay in Hillsborough County, Florida. When first surveyed in 1877 the island had 539 acres of dry land, in 1977 less than 280 acres remained. Erosion rates have increased since the early 1900's with the 20-year period of 1976-1996 having the highest rates; averaging erosion of 25.4 feet per year on the Gulf side of the island. From 1991 to1997, Gulf side erosion averaged 24.6 feet per year. This project is proposed as a temporary erosion control measure for the western side of the island.

Approximately 200,000 to 350,000 cubic yards of dredged material from the St. Petersburg Harbor maintenance dredging project will be placed at Egmont Key. Sediment quality is highly variable across the maintenance project. Material from within Bayboro Harbor is much siltier than that from the remainder of the project with silt contents from 14.4% to 27.4%; well above the state guidelines of 10% maximum silt content for beach quality sand. Silt content for the samples collected from stations outside of Bayboro Harbor varied from 1.3 to 4.4%. The proposed project calls for Bayboro Harbor sediments to be dredged first and to be the first placed below mean high water on the Gulf side of Egmont Key. Dredged material with a greater sand content then will be placed as a cap. No dredged material will be placed above mean high water elevation.

The two geo-tube groins will be constructed after dredged material placement is completed. They will be about 5 feet tall, 12.5 feet wide, and extend 220 feet into the Gulf from the mean high water line. Their top elevation will be +5.0 feet, or about four feet above the filled beach.

Status of the species

The reproductive strategy of sea turtles involves producing large numbers of offspring to compensate for the high natural mortality through their first several years of life. However, for at least two decades, several human-caused mortality factors have contributed to the decline of sea

turtle populations along the Atlantic coast and in the Gulf of Mexico (NRC 1990). These factors include commercial overutilization of eggs and turtles, incidental catches in commercial fishing operations, degradation of nesting habitat by coastal development, and marine pollution and debris. Therefore, human activities that affect the behavior and/or survivability of turtles on their remaining nesting beaches, particularly the few remaining high density nesting beaches, could seriously reduce our ability to conserve sea turtles.

Loggerhead Sea Turtle

The loggerhead sea turtle (*Caretta caretta*), listed as a threatened species on July 28, 1978 (43 FR 32800), inhabits the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Loggerhead sea turtles nest within the continental U.S. from Louisiana to Virginia. Major nesting concentrations in the U.S. are found on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida (Hopkins and Richardson 1984). Total estimated nesting in the Southeast is approximately 50,000 to 70,000 nests per year (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b).

From a global perspective, the southeastern U.S. nesting aggregation is of paramount importance to the survival of the species and is second in size only to that which nests on islands in the Arabian Sea off Oman (Ross 1982, Ehrhart 1989, National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). The status of the Oman colony has not been evaluated recently, but its location in a part of the world that is vulnerable to disruptive events (e.g., political upheavals, wars, catastrophic oil spills) is cause for considerable concern (Meylan *et al.* 1995). The loggerhead nesting aggregations in Oman, the southeastern U.S., and Australia account for about 88 percent of nesting worldwide (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b). About 80 percent of loggerhead nesting in the southeastern U.S. occurs in six Florida counties (Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties) (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991b).

Recent genetic analyses using restriction fragment analysis and direct sequencing of mitochondrial DNA (mtDNA) have been employed to resolve management units among loggerhead nesting cohorts of the southeastern U.S. (Bowen *et al.* 1993; B.W. Bowen, University of Florida, Gainesville, in litt., November 17, 1994, and October 26, 1995; Encalada *et al.* 1998). Assays of nest samples from North Carolina to the Florida Panhandle have identified three genetically distinct nesting sub-populations: (1) northern nesting sub-population - Hatteras, North Carolina, to Cape Canaveral, Florida; (2) South Florida nesting sub-population - Cape Canaveral to Naples, Florida; and (3) Florida Panhandle nesting sub-population - Eglin Air Force Base and the beaches around Panama City, Florida. These data indicate that gene flow between the three regions is very low. If nesting females are extirpated from one of these regions, regional dispersal will not be sufficient to replenish the depleted nesting sub-population (Bowen *et al.* 1993, B.W. Bowen, University of Florida, Gainesville, in litt., October 26, 1995).

Green Sea Turtle

The green sea turtle (*Chelonia mydas*) was listed under the ESA on July 28, 1978 (43 FR 32800). Breeding populations of the green turtle in Florida and along the Pacific Coast of Mexico are listed as endangered; all other populations are listed as threatened. The green turtle has a worldwide distribution in tropical and subtropical waters. Major green turtle nesting colonies in the Atlantic occur on Ascension Island, Aves Island, Costa Rica, and Surinam.

Within the U.S., green turtles nest in small numbers in the U.S. Virgin Islands and Puerto Rico, and in larger numbers along the east coast of Florida, particularly in Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties (National Marine Fisheries Service and U.S. Fish and Wildlife Service 1991a). Nesting also has been documented along the Gulf coast of Florida on Santa Rosa Island (Okaloosa and Escambia Counties) and from Pinellas County through Collier County (Florida Department of Environmental Protection, unpubl. data). Green turtles have been known to nest in Georgia, but only on rare occasions (Georgia Department of Natural Resources, unpubl. data). The green turtle also nests sporadically in North Carolina (North Carolina Wildlife Resources Commission, unpubl. data). The first documentation of green turtle nests in South Carolina were reported in 1996 (S. Murphy, South Carolina Department of Natural Resources, pers. comm., 1996). Unconfirmed nesting of green turtles in Alabama has also been reported (R. Dailey, Bon Secour National Wildlife Refuge, pers. comm., 1995).

Status of the species within the action area

Loggerhead Sea Turtle

The loggerhead sea turtle nesting and hatching season for Hillsborough County, Florida, extends from April 1 through November 30. Incubation ranges from about 45 to 95 days. Information provided by the Florida Marine Research Institute indicates that from 1993 through 1998 loggerhead sea turtle nest numbers varied from 31 to 72 on Egmont Key.

Green Sea Turtle

The green sea turtle nesting and hatching season for Southwest Florida extends from May 15 through October 31. Incubation ranges from about 45 to 75 days. Nesting data from Meylan *et al.* (1995) and the Florida Marine Research Institute (unpubl. data) indicate that from 1979 through 1998, no green sea turtle nests were recorded on Egmont Key; although green turtle nesting has been reported elsewhere on Florida's Southwest coast in Pinellas, Sarasota, Charlotte, Lee, Collier, and Monroe Counties.

Effects of the action

Direct effects

Our concerns include the effects of the installed geotextile groins on sea turtle nesting at Egmont Key and the effects of beach nourishment on sea turtle nesting habitat. Effects to nesting habitat are of particular concern if the placement of the dredged material below mean high water results in material being exposed at tides lower than mean high tide to the extent that provides potential nesting habitat for sea turtles.

The physical obstruction of the groins may affect adult female and hatchling sea turtles. Adult females may be deterred from approaching their preferred nesting location by the presence of the groins. If they pass the groins and attempt to nest they will still be influenced by the geo-tubes that will segment the beach. The geo-tubes will act as barriers between beach segments and also prevent nesting on the geo-tube alignment. The groins may also serve as impediments to emigration by hatchlings. Hatchlings will have less ability to traverse unknown barriers.

Although sand is proposed for placement below the mean high water elevation for this project, there is the potential for it to become exposed at tides lower than mean high tide and contain potential sea turtle nesting habitat. The placement of sand on an eroded section of beach or an existing beach in and of itself may not provide suitable nesting habitat for sea turtles. Although beach nourishment may increase the potential nesting area, significant negative impacts to sea turtles may result if protective measures are not incorporated during construction. Nourishment during the nesting season, particularly on or near high density nesting beaches, can cause increased loss of offspring from human-caused mortality and, along with other mortality sources, may significantly impact the long-term survival of the species. For instance, projects conducted during the nesting and hatching season could result in the loss of sea turtles through disruption of adult nesting activity and by burial or crushing of nests or hatchlings. While a nest monitoring and egg relocation program would reduce these impacts, nests may be inadvertently missed or misidentified as false crawls during daily patrols. In addition, nests may be destroyed by operations at night prior to beach patrols being performed. Even under the best of conditions, about 7 percent of the nests can be misidentified as false crawls by experienced sea turtle nest surveyors (Schroeder 1994).

1. Nest relocation

Besides the potential for missing nests during a nest relocation program, there is a potential for eggs to be damaged by their movement or for unknown biological mechanisms to be affected. Nest relocation can have adverse impacts on incubation temperature (and hence sex ratios), gas exchange parameters, hydric environment of nests, hatching success, and hatchling emergence (Limpus *et al.* 1979, Ackerman 1980, Parmenter 1980, Spotila *et al.* 1983, McGehee 1990). Relocating nests into sands deficient in oxygen or moisture can result in mortality, morbidity, and reduced behavioral competence of hatchlings. Water availability is known to influence the incubation environment of the embryos and hatchlings of turtles with flexible-shelled eggs, which has been shown to affect nitrogen excretion (Packard *et al.* 1984), mobilization of calcium

(Packard and Packard 1986), mobilization of yolk nutrients (Packard *et al.* 1985), hatchling size (Packard *et al.* 1981, McGehee 1990), energy reserves in the yolk at hatching (Packard *et al.* 1988), and locomotory ability of hatchlings (Miller *et al.* 1987).

Comparisons of hatching success between relocated and *in situ* nests have noted significant variation ranging from a 21 percent decrease to a 9 percent increase for relocated nests (Florida Department of Environmental Protection, unpubl. data). Comparisons of emergence success between relocated and *in situ* nests have also noted significant variation ranging from a 23 percent decrease to a 5 percent increase for relocated nests (Florida Department of Environmental Protection, unpubl. data). A 1994 Florida Department of Environmental Protection study of hatching and emergence success of *in situ* and relocated nests at seven sites in Florida found that hatching success was lower for relocated nests in five of seven cases with an average decrease for all seven sites of 5.01 percent (range = 7.19 percent increase to 16.31 percent decrease). Emergence success was lower for relocated nests in all seven cases by an average of 11.67 percent (range = 3.6 to 23.36 percent) (A. Meylan, Florida Department of Environmental Protection, in litt., April 5, 1995).

A final concern about nest relocation is that it may concentrate eggs in an area resulting in a greater susceptibility to catastrophic events. Hatchlings released from concentrated areas also may be subject to greater predation rates from both land and marine predators, because the predators learn where to concentrate their efforts.

2. Equipment

The placement of pipelines and the use of heavy machinery on the beach during a construction project may also have adverse effects on sea turtles. They can create barriers to nesting females emerging from the surf and crawling up the beach, causing a higher incidence of false crawls and unnecessary energy expenditure.

3. Artificial lighting

Another impact to sea turtles is disorientation (loss of bearings) and misorientation (incorrect orientation) of hatchlings from artificial lighting. Visual cues are the primary sea-finding mechanism for hatchlings (Mrosovsky and Carr 1967, Mrosovsky and Shettleworth 1968, Dickerson and Nelson 1989, Witherington and Bjorndal 1991). Artificial beachfront lighting is a well documented cause of hatchling disorientation and misorientation on nesting beaches (Philbosian 1976; Mann 1977; Florida Department of Environmental Protection, unpubl. data). In addition, research has also documented significant reduction in sea turtle nesting activity on beaches illuminated with artificial lights (Witherington 1992). Therefore, construction lights along a project beach and on the dredging vessel may deter females from coming ashore to nest, disorient females trying to return to the surf after a nesting event, and disorient and misorient emergent hatchlings from adjacent non-project beaches. Any source of bright lighting can profoundly affect the orientation of hatchlings, both during the crawl from the beach to the ocean and once they begin swimming offshore. Hatchlings attracted to light sources on dredging barges may not only suffer from interference in migration, but may also experience higher probabilities of predation to predatory fishes that are also attracted to the barge lights. This impact could be

reduced by using the minimum amount of light necessary (may require shielding) or low pressure sodium lighting during project construction.

Indirect effects

1. Changes in the physical environment

Beach nourishment may result in changes in sand density (compaction), beach shear resistance (hardness), beach moisture content, beach slope, sand color, sand grain size, sand grain shape, and sand grain mineral content if the placed sand is dissimilar from the original beach sand (Nelson and Dickerson 1988a). These changes could result in adverse impacts on nest site selection, digging behavior, clutch viability, and emergence by hatchlings (Nelson and Dickerson 1987, Nelson 1988).

Beach compaction and unnatural beach profiles that may result from beach nourishment activities could negatively impact sea turtles regardless of the timing of projects. Very fine sand and/or the use of heavy machinery can cause sand compaction on nourished beaches (Nelson *et al.* 1987, Nelson and Dickerson 1988a). Significant reductions in nesting success (i.e., false crawls occurred more frequently) have been documented on severely compacted nourished beaches (Fletemeyer 1980, Raymond 1984, Nelson and Dickerson 1987, Nelson *et al.* 1987), and increased false crawls may result in increased physiological stress to nesting females . Sand compaction may increase the length of time required for female sea turtles to excavate nests and also cause increased physiological stress to the animals (Nelson and Dickerson 1988c). Nelson and Dickerson (1988b) concluded that, in general, beaches nourished from offshore borrow sites are harder than natural beaches, and while some may soften over time through erosion and accretion of sand, others may remain hard for 10 years or more.

These impacts can be minimized by using suitable sand and by tilling the beach after nourishment if the sand becomes compacted. The level of compaction of a beach can be assessed by measuring sand compaction using a cone penetrometer (Nelson 1987). Tilling of a nourished beach may reduce the sand compaction to levels comparable to unnourished beaches. However, a pilot study by Nelson and Dickerson (1988c) showed that a tilled nourished beach will remain uncompacted for up to 1 year. Therefore, the Service requires multi-year beach compaction monitoring and, if necessary, tilling to ensure that project impacts on sea turtles are minimized. A root rake with tines at least 42 inches long and less than 36 inches apart pulled through the sand is recommended for compacted beaches. Service policy calls for beaches to be tilled if compaction levels exceed 500 psi.

A change in sediment color on a beach could change the natural incubation temperatures of nests in an area, which, in turn, could alter natural sex ratios. To provide the most suitable sediment for nesting sea turtles, the color of the nourished sediments must resemble the natural beach sand in the area. Natural reworking of sediments and bleaching from exposure to the sun would help to lighten dark nourishment sediments; however, the timeframe for sediment mixing and bleaching to occur could be critical to a successful sea turtle nesting season.

2. Escarpments

On nourished beaches, steep escarpments may develop along their water line interface as they adjust from an unnatural construction profile to a more natural beach profile (Coastal Engineering Research Center 1984, Nelson *et al.* 1987). These escarpments can hamper or prevent access to nesting sites. Researchers have shown that female turtles coming ashore to nest can be discouraged by the formation of an escarpment, leading to situations where they choose marginal or unsuitable nesting areas to deposit eggs (e.g., in front of the escarpments, which often results in failure of nests due to prolonged tidal inundation). This impact can be minimized by leveling any escarpments prior to the nesting season.

Cumulative effects

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The Service is not aware of any cumulative effects in the project area.

Conclusion

After reviewing the current status of the loggerhead and green sea turtles, the environmental baseline for the action area, the effects of the proposed groin placement and dredged material placement, and the cumulative effects, it is the Service's biological opinion that the erosion control project, as proposed, is not likely to jeopardize the continued existence of the loggerhead or green sea turtle and is not likely to destroy or adversely modify designated critical habitat.

No critical habitat has been designated for the loggerhead sea turtle; therefore, none will be affected. Critical habitat for the green sea turtle has been designated for the waters surrounding Culebra Island, Puerto Rico, and its outlying keys; however, this action does not affect Culebra Island, Puerto Rico, or its outlying keys, and no destruction or adverse modification of that critical habitat is anticipated.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered or threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of

section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the Corps of Engineers so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps of Engineers has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps of Engineers (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps of Engineers must report the progress of the action and its impacts on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

Amount or extent of incidental take

The Service has reviewed the biological information and other information relevant to this action. Based on this review, incidental take is anticipated for (1) all sea turtle nests that may be constructed and eggs that may be deposited and missed by a nest survey and egg relocation program within the boundaries of the proposed project; (2) all sea turtle nests deposited during the period when a nest survey and egg relocation program is not required to be in place within the boundaries of the proposed project; (3) harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities; (4) disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; (5) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; and (6) all nests destroyed as a result of escarpment leveling within a nesting season when such leveling has been approved by the Fish and Wildlife Service.

Effect of the take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and prudent measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of loggerhead and green sea turtles.

1. If the erosion control project will be conducted during the sea turtle nesting season,

surveys for nesting sea turtles shall be conducted. If nests are constructed in the area of dredged material placement, the eggs shall be relocated.

2. After completion of the erosion control project and prior to the next three nesting seasons, beach compaction shall be monitored and tilling shall be conducted as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.

3. Immediately after completion of the erosion control project and prior to the next three nesting seasons, monitoring shall be conducted to determine if escarpments are present and escarpments shall be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities.

4. The applicant shall ensure that contractors doing the beach nourishment work fully understand the sea turtle protection measures detailed in this incidental take statement.

5. During the sea turtle nesting season, construction equipment and pipes shall be stored in a manner that will minimize impacts to sea turtles to the maximum extent practicable.

6. During the sea turtle nesting season, lighting associated with the project shall be minimized to reduce the possibility of disrupting and disorienting nesting and/or hatchling sea turtles.

Terms and conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps of Engineers must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. All fill material placed above the mean high water elevation shall be sand that is similar to that already existing at the beach site in both coloration and grain size distribution. All such fill material shall be free of construction debris, rocks, or other foreign matter and shall generally not contain, on average, greater than 10 percent fines (i.e., silt and clay) (passing the #200 sieve) and shall not contain, on average, greater than 5 percent coarse gravel or cobbles, exclusive of shell material (retained by the #4 sieve).

2. Daily early morning sea turtle nesting surveys shall be required if any portion of the erosion control project occurs during the period from April 1 through November 30. Nesting surveys shall be initiated 65 days prior to project activities or by April 1, whichever is later. Nesting surveys shall continue through the end of the project or through September 30, whichever is earlier. If nests are constructed in areas where they may be affected by construction activities, eggs shall be relocated per the following requirements.

2a. Nesting surveys and egg relocations shall only be conducted by personnel with

prior experience and training in nest survey and egg relocation procedures. Surveyors shall have a valid Florida Fish and Wildlife Conservation Commission permit. Nesting surveys shall be conducted daily between sunrise and 9 a.m. Surveys shall be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures.

2b. Only those nests that may be affected by construction activities shall be relocated. Nests requiring relocation shall be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation. Nest relocations in association with construction activities shall cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 65 days shall be marked and left in place unless other factors threaten the success of the nest. Any nests left in the active construction zone shall be clearly marked, and all mechanical equipment shall avoid nests by at least 10 feet.

3. Immediately after completion of the erosion control project and prior to April 1 for 3 subsequent years, if dredged material placed during this project becomes exposed at tides lower than mean high tide such that it contains potential sea turtle nesting habitat, sand compaction shall be monitored in the area of restoration in accordance with a protocol agreed to by the Service, the State regulatory agency, and the applicant. If required, the area shall be tilled to a depth of 36 inches. All tilling activity must be completed prior to April 1. If the project is completed during the nesting season, tilling shall not be performed in areas where nests have been left in place or relocated. A report on the results of compaction monitoring shall be submitted to the Service prior to any tilling actions being taken. An annual summary of compaction surveys and the actions taken shall be submitted to the Service. This condition shall be evaluated annually and may be modified if necessary to address sand compaction problems identified during the previous year.

4. Visual surveys for escarpments along the project area shall be made immediately after completion of the beach nourishment project and prior to April 1 for 3 subsequent years. Results of the surveys shall be submitted to the Service prior to any action being taken. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour by April 1. If the project is completed during the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. The Service shall be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service will provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An

annual summary of escarpment surveys and actions taken shall be submitted to the Service.

5. The applicant shall arrange a meeting between representatives of the contractor, the Service, the Florida Fish and Wildlife Conservation Commission, and the permitted person responsible for egg relocation at least 30 days prior to the commencement of work on this project. At least 10 days advance notice shall be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle protection measures.

6. From April 1 through November 30, staging areas for construction equipment shall be located off the beach to the maximum extent practicable. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities. Temporary storage of equipment shall be off the beach to the maximum extent possible. Temporary storage of equipment on the beach shall be in such a manner so as to impact the least amount of nesting habitat and shall likewise not compromise the integrity of the dune systems.

7. From April 1 through November 30, all on-beach lighting associated with the project shall be limited to the immediate area of active construction only and shall be the minimal lighting necessary to comply with safety requirements. Shielded low pressure sodium vapor lights are recommended to minimize illumination of the nesting beach and nearshore waters. Lighting on offshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement of lights to avoid excessive illumination of the water, while meeting all U.S. Coast Guard and OSHA requirements. Shielded low pressure sodium vapor lights are highly recommended for lights on offshore equipment that cannot be eliminated.

8. In order to further reduce possible impacts to nesting and hatchling sea turtles, nighttime monitoring shall be required in the groin construction area during any periods when excavated trenches are present on the beach at night.

9. If a geotextile tube begins to disintegrate, the tube shall be repaired or removed and all material exfoliating from it shall be removed immediately. If maintenance of a tube is required during the period from April 1 through November 30, no work shall be initiated without prior coordination with the Fish and Wildlife Service Jacksonville Field Office.

10. A report describing the actions taken to implement the terms and conditions of this incidental take statement shall be submitted to the Jacksonville, Florida Field Office within 60 days of completion of the proposed work for each year when the activity has occurred. This report will include the dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and locations of self-release beach sites, nest survey and relocation results, and hatching success of nests.

11. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project should be notified so the eggs can be moved to a suitable relocation site.

12. Upon locating a dead, injured, or sick endangered or threatened sea turtle specimen, initial notification must be made to the U.S. Fish and Wildlife Service Law Enforcement Office located in St. Petersburg, Florida at (727) 570-5398. Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

The Service believes that no more than the following types of incidental take will result from the proposed action: (1) all sea turtle nests that may be constructed and eggs that may be deposited and missed by a nest survey and egg relocation program within the boundaries of the proposed project; (2) all sea turtle nests deposited during the period when a nest survey and egg relocation program is not required to be in place within the boundaries of the proposed project; (3) harassment in the form of disturbing or interfering with female turtles attempting to nest within the construction area or on adjacent beaches as a result of construction activities; (4) disorientation of hatchling turtles on beaches adjacent to the construction area as they emerge from the nest and crawl to the water as a result of project lighting; (5) behavior modification of nesting females due to escarpment formation within the project area during a nesting season, resulting in false crawls or situations where they choose marginal or unsuitable nesting areas to deposit eggs; and (6) all nests destroyed as a result of escarpment leveling within a nesting season when such leveling has been approved by the Fish and Wildlife Service.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Surveys for nesting success of sea turtles should be continued for a minimum of 3 years following the erosion control project to determine whether sea turtle nesting success has been adversely impacted.

2. Educational signs should be placed where appropriate at beach access points explaining the importance of the area to sea turtles and/or the life history of sea turtle species that nest in the area.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action(s) outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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Planning Division
Environmental Branch

JAN 0 6 2000

Mr. David J. Hankla
Field Supervisor
U.S. Fish and Wildlife Service
Suite 310
6620 Southpoint Drive South
Jacksonville, Florida 32216

Dear Mr. Hankla:

We are requesting a Biological Opinion for the beach placement of dredged material from the St. Petersburg Harbor maintenance dredging along the east shoreline of Egmont Key, Tampa Bay, Florida (See attached maps and drawings).

The State of Florida has requested we place the material along the beach to retard erosion until a more permanent solution can be determined. As part of this temporary measure it is planned to construct two geo-textile tube groins. The main purpose is to preserve the cultural resources on the island owned by the Department of Interior and leased to the State of Florida. According to the Egmont Key State Park manager, Mr. Robert Baker, sea turtle nesting along this area was severely impacted by the erosion during the Hurricane Floyd as the storm passed by the area. According to the State, they believe this placement would help create additional sea turtle nesting habitat along the island.

If you have any questions concerning this request, please contact Mr. Bill Fonferek at 904-232-2803 or by e-mail at William.J.Fonferek@usace.army.mil.

Sincerely,

James C. Duck
Chief, Planning Division

Enclosure

Copy furnished (w/encls):

Dr. Robbin Trindell, Florida Fish and Wildlife Conservation Commission, Office of Environmental Services, Protected Species Management, 620 South Meridian Street, Tallahassee, Florida 32399-6000

bcc (w/o encls):
CESAJ-DP-I (Murphy)
CESAJ-CO-N (Novak)

Fonferek/CESAJ-PD-ER/2803/PJO 12-5
Dugger/CESAJ-PD-ER
Smith/CESAJ-PD-E
Murphy/CESAJ-DP-I
Duck/CESAJ-PD

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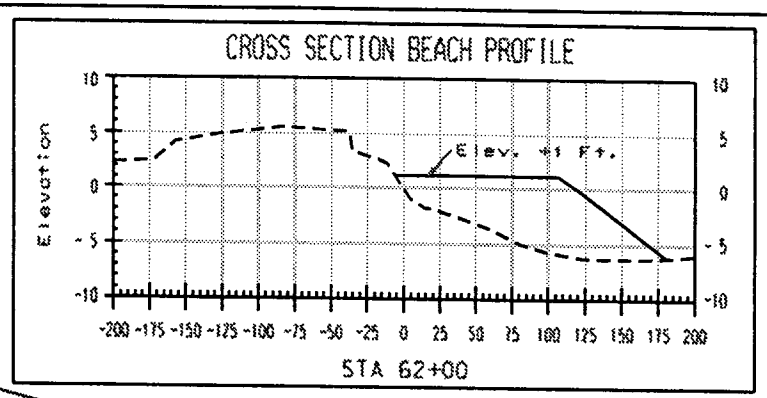
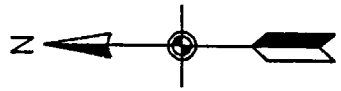




SEE GEOTUBE DETAIL

Egmont Key

Limits of Beach Placement

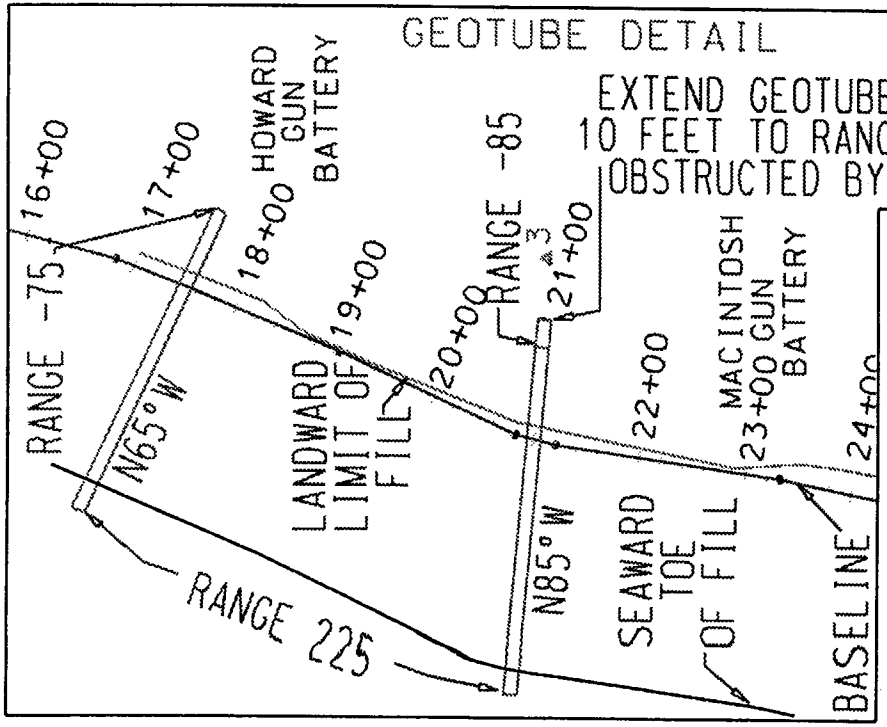
LANDWARD LIMIT OF FILL

SEAWARD LIMIT OF FILL

0+00 10+00 20+00 30+00 40+00 50+00 60+00 70+00 80+00 90+00 100+00 110+00 120+00 130+00 140+00

GEOTUBE DETAIL

EXTEND GEOTUBE ADDITIONAL 10 FEET TO RANGE -95 IF NOT OBSTRUCTED BY VEGITATION



U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT, JACKSONVILLE, FLORIDA

MODIFICATION TO WATER QUALITY CERTIFICATION #522363069 FOR MAINTENANCE DREDGING OF ST. PETERSBURG HARBOR, FLORIDA, TO INCLUDE PLACEMENT AT EGMONT KEY

PLACEMENT AREA PLAN VIEW & CROSS SECTION

REV: Jan 2000

WQC DRAWING NO. 2